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COMMITTEE OF EXPERTS ON THE
TRANSPORT OF DANGEROUS GOODS

Sub-Committee of Experts on the
Transport of Dangerous Goods

REPORT OF THE SUB-COMMITTEE OF EXPERTS ON ITS SEVENTH SESSION
(Geneva, 12 - 21 July 1993)

CONTENTS

	Paragraphs
ATTENDANCE	1 and 2
ADOPTION OF THE AGENDA	3
ELECTION OF OFFICEERS	4
RATIONALIZATION OF THE MANUAL OF TESTS AND CRITERIA	5 - 19
Working Group on the Rationalization of the Manual of Tests and Criteria	15
Report of the Working Group	16 - 19
CLASS 1 (EXPLOSIVES) MATTERS	20 - 36
Nitroglycerin mixtures with saccharides	20 and 21
Deletion of UN 0158 and UN 0203	22
IBCs for Class 1 substances and articles	23 - 26
Packagings for explosives	27 - 31
Testing of explosives	32 - 34
ICAO Convention on the Marking of Plastic Explosives for the Purpose of Detection	35 - 36
SEGREGATION REQUIREMENTS FOR DANGEROUS GOODS	37 - 39
CLASS 8 MATTERS	40 - 48
Division of Class 8 into acidic, basic and other corrosive substances	40 - 43
In vitro testing for evaluating corrosivity	44 - 47
Tests and criteria for Class 8	48
ENVIRONMENTALLY HAZARDOUS SUBSTANCES	49 - 56
LISTING AND CLASSIFICATION	57 - 73
EDITORIAL REVIEW OF CHAPTER 3	74 and 75

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CONTENTS (continued)

	Paragraphs
MATTERS RELATING TO PACKAGINGS AND IBCs	76 - 80
REVIEW OF CHAPTER 12 AND MULTIMODAL TANK TABLES	81 - 100
REVIEW OF CHAPTER 15 (DANGEROUS GOODS IN LIMITED QUANTITIES)	101
ACTIVITIES OF THE IPCS COORDINATING GROUP ON THE HARMONIZATION OF CLASSIFICATION AND LABELLING SYSTEMS	102 - 124
Outcome of the United Nations Conference on Environment and Development	102 - 115
Criteria for toxicity	116 - 123
Other matters	124
RELATIONS WITH OTHER ORGANIZATIONS	125 - 136
Relations with UNEP	125 - 127
Relations with ISO	128 - 130
Relations with ICAO	131 - 133
Relations with IMO	134 and 135
Relations with ILO	136
OTHER BUSINESS	137 - 142
Introduction of CAS numbers into the UN Recommendations	138 - 140
Division 6.2 matters	141 and 142
FUTURE WORK PROGRAMME	143 - 145
ADOPTION OF THE REPORT	146

* * *

	Page
Annex 1: Report of the Working Group on Rationalization of the Manual of Tests and Criteria	30 - 36
Annex 2: Draft Amendments to the Recommendations	37 - 44

REPORT

ATTENDANCE

1. The Sub-Committee of Experts on the Transport of Dangerous Goods held its seventh session from 12 to 21 July 1993. The session was attended by experts from the following countries: Canada; China; France; Germany; India; Italy; Japan; Netherlands; Norway; Poland; Russian Federation; Sweden; United Kingdom; United States of America. Observers from the European Community (EC), Argentina, Austria, Belgium, Brazil, Finland, Spain, Switzerland and the Ukraine participated in accordance with Rule 72 of the Rules of Procedures of the Economic and Social Council. The following specialized agencies and intergovernmental organizations attended the session: International Labour Organisation (ILO); International Civil Aviation Organization (ICAO); International Maritime Organization (IMO); Central Office for International Railway Transport (OCTI). Representatives of the International Organization for Standardization (ISO), the International Air Transport Association (IATA), the International Road Transport Union (IRU), the European Chemical Industry Council (CEFIC), the Hazardous Materials Advisory Council (HMAC) took part in the discussions when items of concern to their organizations were considered. The secretariat of the Organization for Economic Cooperation and Development (OECD) was also present at the invitation of the secretariat.

2. The session was opened by Mr. J. Capel Ferrer, Director, ECE Transport Division. In his opening statement he announced that the eighth edition of the United Nations Recommendations was now ready for printing and that advanced copies would be circulated to delegates during the session. He also informed the Sub-Committee that the filling of the vacant P3 post in the secretariat by internal promotion would liberate a P2 post which should be opened as usual for this category of posts to national competitive examination.

ADOPTION OF THE AGENDA

3. The Sub-Committee adopted the provisional agenda prepared by the secretariat (ST/SG/AC.10/C.3/13 and Add.1), as modified for inclusion of papers submitted at a later date.

ELECTION OF OFFICERS

4. The Committee of Experts at its seventeenth session had agreed that Mr. L. Grainger (United Kingdom) and Mr. J. Monteith (Canada) should be re-elected as Chairman and Vice-Chairman respectively for the biennium 1993-1994 (ST/SG/AC.10/19, paragraph 216).

RATIONALIZATION OF THE MANUAL OF TESTS AND CRITERIA

Background documents: ST/SG/AC.10/R.343 (secretariat), ST/SG/AC.10/C.3/12 and Add.1, annex 3, ST/SG/AC.10/19, annex 2

5. The Chairman recalled the plan of work and timetable for rationalization of the Manual of Tests and Criteria (ST/SG/AC.10/19, annex 2). He underlined the fact that this Manual was now referred to in various legal instruments applicable to the international transport of dangerous goods, and had therefore gained itself a legal status. He emphazised the need for achieving the revision of the Manual in the current biennium. A working group had been established to consider Part I during the current session.

Document: ST/SG/AC.10/C.3/R.366 (Germany - Report of the BAM Working Group)

6. The expert from Germany introduced the report of a working group on the Rationalization of the Manual of Tests and Criteria which was held in Berlin from 8 to 12 March 1993. He drew attention to two specific questions raised by the working group:

(a) Reservations expressed by certain experts on the deletion of certain tests, and the need therefore to reconsider the policy adopted by the Sub-Committee at its sixth session (ST/SG/AC.10/C.3/12/Add.1, annex 3);

(b) Possible deletion of the 4 (b) (ii) 12 m drop test.

7. The expert from France said that he no longer had reservations on test types 1 (c) and 2 (c) (see document ST/SG/AC.10/C.3/12, paragraph 35), but he still had reservations on tests type 3 (a) (see document ST/SG/AC.10/C.3/R.373). The expert from Canada also had reservations on the deletion of test 3 (a) (v).

8. The Sub-Committee reaffirmed the policy previously adopted i.e. to establish a series of recommended tests, alternative tests and tests that should be deleted from the Manual. The working group on the Rationalization of the Manual of Tests and Criteria was requested to consider the various comments made with regard to deletions of tests in the light of the new information submitted, bearing in mind the need for completion of the revision of Part I of the Manual at the current session.

Documents: ST/SG/AC.10/C.3/R.367 (United Kingdom - Technical amendments to Part I of the Manual), -/C.3/R.370 (United Kingdom - Consolidated draft Manual of Test and Criteria), -/C.3/R.373 (France - 3 (a) (iv) 30 kg fallhammer test as a test recommended for sensitiveness to impact)

9. These three documents were deferred to the working group.

Document: **ST/SG/AC.10/C.3/R.372 (France - Part III of the Test Manual - Tests for liquid and solid oxidizing substances)**

10. This document had been submitted for preliminary discussion by experts. The Sub-Committee encouraged the expert from France to continue the work on tests and criteria for solid oxidizing substances, and noted that a document on tests for liquid oxidizing substances was under preparation in Sweden (see information paper INF.9). Experts were invited to communicate between themselves in the meantime, and to consider carefully the information provided.

Document: **ST/SG/AC.10/C.3/R.385 (CEFIC - Test methodology for classification of self-heating products)**

11. Several delegations expressed sympathy for the proposal to amend the existing methodology for taking account of the volume of substance to be carried. However, it was felt that test results were missing from the proposal and that additional information should be provided. It was agreed to reconsider the question at the next session and the document was withdrawn. The representative of CEFIC agreed to prepare a new document.

Document: **ST/SG/AC.10/C.3/R.399 (Netherlands - Proposal for a UN Gap Test)**

12. The addition of a new UN gap test which would combine the advantages of the BAM and TNO tube tests and the United States and France gap tests would imply "round-robin" testing of about 20 to 30 substances (explosives and organic peroxides) and could cause a problem with regard to the timetable. The working group was requested to look at the practicability of such an addition in the process of revision of the Manual.

Document: **ST/SG/AC.10/C.3/R.400 (Netherlands - Proposal for a UN pressure vessel test)**

13. This proposal was deferred to the next session as it relates to Part III of the Manual. However experts were invited to discuss the document in an informal group and it was agreed that round-robin testing should begin and that the test results should be sent directly to TNO so that a decision could be taken at the next session.

Document: **ST/SG/AC.10/C.3/R.419 (United States - Revised Bureau of Explosive Machine Test)**

14. The proposed revised test 3 (a) (i) to be included in section 13.4.1 of the Manual was adopted.

Working Group on the Rationalization of the Manual of Tests and Criteria

15. A working group was convened to consider documents ST/SG/AC.10/C.3/R.370, -/C.3/R.366, -/C.3/R.367, -/C.3/R.373, -/C.3/R.399 as well as information papers INF.12 (Test 3 (a) (v), Canada), INF.13 (First type 3 (a), Canada), INF.14 (Type 6 (c) external fire (bonfire) test, OECD-IGUS),

INF.17 (test type 3 (b), United Kingdom) and INF.18 (test type 4 (b), United Kingdom), and to concentrate on the finalization of Part I of the Manual of Tests and Criteria and the relevant appendices.

Report of the Working Group

16. The Sub-Committee took note of the report of the working group and agreed to include this report as an annex to its report as a record of the principles underlying the agreed amendments to document ST/SG/AC.10/C.3/R.370 and of the outstanding actions (see annex 1).

17. With regard to paragraph 5 of the report, the expert from France said that he was opposed to the hierarchizing of tests as there was still no evidence that some tests would be more appropriate than others. He insisted on the need to retain alternative tests.

18. Documents ST/SG/AC.10/C.3/R.366, -/C.3/R.370, -/C.3/R.385, -/C.3/R.399, -/C.3/R.400 were carried forward to the November 1993 session of the Sub-Committee. The following new documents are expected:

revised solid oxidizer test (France);
liquid oxidizer test (Sweden);
revised organic peroxide/self-reactive substance flow chart (United Kingdom);
deletion of SCB, ABL friction test and Susan test (United States).

19. Documents ST/SG/AC.10/C.3/R.367 (paragraph 5) and -/C.3/R.382 were carried forward to the July 1994 session. The following new documents are expected for that session:

general introduction and Part I of the Manual (United Kingdom);
Parts II and III and appendices to the Manual (United Kingdom);
revised test prescription for 6 (c) test (OECD - IGUS);
preferred 3 (a) test (Canada) ;
consequential amendments to Chapters 4, 11 and 14 (United Kingdom).

CLASS 1 (EXPLOSIVES) MATTERS

Nitroglycerin mixtures with saccharides

Documents: ST/SG/AC.10/C.3/R.369 (United Kingdom - Nitroglycerin mixtures with less than 90% lactose),
ST/SG/AC.10/C.3/R.387 (Germany - Testing and classification of nitroglycerin mixtures with saccharides),
ST/SG/AC.10/C.3/R.382 (Germany - Heating under confinement in a steel box)

20. The expert from the United Kingdom recommended classification of such mixtures in Division 4.1, with special provision 181 and a new special provision drawing attention to the risk of explosives in case of fire. On the

contrary, the expert from Germany advocated a classification in Division 1.4 for concentration between 4 and 10% of nitroglycerin as these mixtures can detonate in a fire according to test 6 (c), and classification in Division 4.1 for concentrations below 4%; he felt that, although there had been no accident during the transport of such mixtures, this approach would encourage the industry to carry mixtures with the lower concentration of nitroglycerin, which would decrease the probability of such accidents.

21. As the matter was controversial, and as consideration could be given to other kinds of mixtures, for example with polymers, and as any decision would have to be formally endorsed by the Committee in 1994 before being considered as a Recommendation, the Sub-Committee decided to postpone the decision to a further session and invited all experts to consider the question in detail during the intersessional period. Discussion of the three documents was postponed.

Deletion of UN 0158 and UN 0203

Document: ST/SG/AC.10/C.3/R.381 (Germany - Deletion of two entries of Class 1)

22. The proposal was adopted (see annex 2).

IBCs for Class 1 substances and articles

Documents: ST/SG/AC.10/C.3/R.401 (HMAC)
ST/SG/AC.10/C.3/R.405 and -/C.3/R.414 (Germany)

23. The Sub-Committee agreed that new provisions should be developed for the transport of explosive substances in IBCs, and adopted the approach by HMAC in document -/C.3/R.401, paragraphs 5 (a) and 5 (b) as a starting point for development of provisions, i.e. to authorize only blasting explosives of type B and E and very insensitive explosive substances, UN Nos. 0331, 0332 and 0482, of Division 1.5D to be carried in metal, flexible, rigid plastics and composite IBCs meeting the requirements of Chapter 16; flexible IBCs should only be used for solids. The proposal of Germany to use IBCs for type B and type E Blasting Explosives of Division 1.1D was rejected. However, it was agreed that document -/C.3/R.405 should be taken into account for further developments in Chapters 4 and 10.

24. The expert from Canada said that slurries were carried in flexible IBCs in his country and he asked whether they could be considered as solids. He was invited to prepare a relevant document for the next session.

25. With regard to the carriage of explosive articles in IBCs (document -/C.3/R.414), it was generally agreed that there was a lack of provisions for the carriage of large articles in packagings of a bigger size than that of conventional Chapter 9 packagings, but that it might not be appropriate to classify as IBCs packagings which do not comply with Chapter 16. There was also a lack of definition of large articles. The expert from the United States noted that large articles are permitted to be carried unpackaged and considered that the packagings for such large articles

should be treated as overpacks. He also pointed out that in document -/C.3/R.371 he had proposed a definition for large articles. There was no support for the proposal by Germany but it was agreed that the issue should be addressed in another way.

26. The expert from Canada announced that he intended to prepare a submission on packagings for large shaped charges at a future session.

Packagings for explosives

Documents: **ST/SG/AC./C.3/R.186 and -/Add.1 (United Kingdom),**
ST/SG/AC.10/C.3/R.333 (France),
ST/SG/AC.10/C.3/R.371 and Corr.1 (United States),
ST/SG/AC.10/C.3/R.376 (United Kingdom)

27. As the approach of the expert from the United States in document -/C.3/R.371 differed from the joint approach of France and the United Kingdom in document -/C.3/R.376, it was agreed that the two documents should be combined in a single new document for consideration at the ninth session of the Sub-Committe in July 1994 which will propose that all text relating to Class 1 packagings should be in Chapter 4 with the consequential deletion of Chapter 10.

28. To assist the process, the expert from the United States offered to host a working group in Washington in the week starting 18 October 1993, to which the experts from France, Canada and the United Kingdom responded positively.*/ It was agreed that the objective of the working group was only to combine the two documents and not to discuss other Class 1 packaging matters.

29. It was also agreed that work should be undertaken in the next biennium to deal more fully with the use of IBCs to carry Class 1 articles and substances, packages over 400 kg and unpackaged articles. It was felt that the two stage approach was essential and that it should lead to a full and thorough review of Class 1 packing methods by the Committee's session in December 1996.

30. The expert from Norway said that it was urgent to address the questions of the carriage of 1.1D explosives in IBCs and of large articles, as at the moment there was no recommendation for such carriage, although it took place in practice.

31. The secretariat was invited to issue information paper 16 as an official addendum to document -/C.3/R.376.

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*/ Contact: Mr. Charles Ke, Chief, Science Branch, RSPA, US Department of Transportation, Research and Special Program Administration, 400 7th Street, S.W. Washington D.C. 20590, Telephone No.(202) 366 4545, Fax: (202) 366 3753.

Testing of explosives

Document: ST/SG/AC.10/C.3/R.362 (Russian Federation)

32. In the absence of the Class 1 expert from the Russian Federation, it was agreed to postpone the discussion of the proposed new approach to testing of explosive materials on hazard deflagration to explosion transition.

Document: ST/SG/AC.10/C.3/R.368 (United Kingdom - Azodicarbonamide, UN 3242)

33. The proposals to revise Special Provision 215 and to amend table 14.1 were adopted (see annex 2).

Document: ST/SG/AC.10/C.3/R.412 (Secretariat - Statement certifying the structural serviceability of transport units for the transport of Goods of Class 1)

34. The Sub-Committeee confirmed that such a statement should be required not only for freight containers but also for vehicles and wagons, and agreed to reinstate paragraph 4.7.2 as revised at the fifth session (ST/SG/AC.10/C.3/10/Add.1, annex 4) (see annex 2). The paragraph had been deleted by the Committee in the eighth revision of the Recommendations on the wrong assumption that such a statement was not required for sea transport.

ICAO Convention on the Marking of Plastic Explosives for the Purpose of Detection

35. A member of the secretariat informed the Sub-Committee that in response to the request made by CEFIC at the seventeenth session of the Committee (ST/SG/AC.10/19, paragraph 48), communication had been established with ICAO and assurances of co-operation and of information on the work of the ad hoc Group of Specialists on the Detection of Explosives had been received from the Secretary-General of ICAO.

36. The Sub-Committee requested the secretariat to bring to its attention any development that might be of interest to its scope of work, but expressed the general view that "marking" explosive substances by introducing into them a detection agent was a security issue which would not fall within its competence as long as the ICAO ad hoc Group of Specialists would not address the classification of Class 1 substances or articles or safety issues such as the conditions of transport.

SEGREGATION REQUIREMENTS FOR DANGEROUS GOODS

Documents: ST/SG/AC.10/R.346/Rev.1 (China)

37. This document contained proposed recommendations on segregation which were largely inspired from the provisions of the International Maritime Dangerous Goods Code (IMDG). Although it was recognized that recommendations should be developed in general terms, several experts underlined the fact that

segregation requirements could vary according to the mode of transport used and that modal organizations should remain free to develop detailed requirements specific to this mode. Paragraph XX.1.4 of the document in particular, describing the categories of segregation was too much related to sea transport. It was also underlined that the main problem to be addressed might be the multimodal transport of freight containers, and reference was made to a new paragraph 13.6.6 of the Recommendations (container packing certificate) where a statement was required that packages which had to be segregated had not been loaded in a single container.

38. The expert from China offered to prepare a new submission for the next session which would take account of the comments made.

Document: ST/SG/AC.10/C.3/R.395 (Argentina)

39. The observer from Argentina described a proposed coding system for harmonizing interpretation of the segregation provisions of the IMDG Code with a view to including such provisions in the Recommendations. The Sub-Committee felt that it would not be appropriate to pursue this matter at least as long as general recommendations had not been developed in the UN Recommendations. The observer from Argentina was invited to provide an exhaustive information paper describing the system used in his country.

CLASS 8 MATTERS

Division of Class 8 into acidic, basic and other corrosive substances

Documents: ST/SG/AC.10/C.3/R.365 (China), ST/SG/AC.10/C.3/R.377 (HMAC), ST/SG/AC.10/C.3/R.390 (United Kingdom)

40. In document -/C.3/R.365, the expert from China proposed to divide Class 8 into Divisions 8.1 (acidic substances), 8.2 (basic substances) and 8.3 (other corrosive substances), as he felt that there was a need for segregating acid substances from basic substances, as well as acid or basic substances from other classes of dangerous goods. The representative of OCTI mentioned that according to RID and ADR mixed packing of acid and basic substances was not allowed if they were packed in fragile receptacles. The expert from the Federation of Russia and the observer from the Ukraine said that Class 8 was divided into three divisions in their national regulations for segregation purposes. It was also mentioned that certain proper shipping names already included the terms "acidic" or "basic", and that certain schedules of the IMDG Code required a segregation of certain substances from acids, which was not easy to implement in practice as acids were not indicated by a specific hazard label.

41. In document -/C.3/R.377, HMAC posed a number of questions with regard to the benefits of such a proposal in comparison with the costs associated with the implementation of such changes, the relationship between the proposed classification and the existing criteria, the benefits for emergency response purposes or operational purposes, the labels to be used, the use of pH values as a criteria, and the possible multiplication of n.o.s. entries.

42. In document -/C.3/R.390, the expert from the United Kingdom acknowledged that there might be benefits with regard to segregation of acids from certain substances of other classes, but he considered that, generally, reactions between acids and bases resulted in salts less dangerous than the reagents. He mentioned that similar action would have to be taken for acids and bases during fire-fighting and medical first aid treatment, and that most corrosive substances described as acidic or basic substances in the current regulations were either strong acids or strong alkaline substances, all of them corrosive to tissue and therefore it was not appropriate to use the pH 6 borderline as a criterion. He felt that there was no demonstrated need for additional labelling requirements that would justify such divisions.

43. The proposal by China was rejected by a large majority vote.

In vitro testing for evaluating corrosivity

Document: ST/SG/AC.10/C.3/R.406 (United States)

44. The expert from the United States informed the Sub-Committee that an *in vitro* test method had recently been authorized for limited use for purposes of determining whether substances met the criteria for Class 8 and for assigning Packing Groups. He indicated that the test was performed on a synthetic membrane instead of animal skin, and that there was a correlation of results of 90% between *in vitro* and existing results. In reply to a question by the Chairman, he confirmed that the method was a patented method. The expert from Germany said that he could accept the test results of this method as there was correlation between tests on membrane and tests on animal skin.

45. Several delegations expressed interest in recommending a test method that would reduce animal testing, but there was some reluctance to refer specifically to a patented test method.

46. The Sub-Committee expressed interest in the method authorized in the United States but unanimously considered that it would be premature to recommend adoption of any specific method until more experience was gained. The Sub-Committee encouraged OECD to revise and update its guideline No.404 to develop an internationally agreed *in vitro* methodology. The representative of OECD said that his Organization could respond to this request and the matter could be considered in October 1993.

47. Noting that paragraph 8.3 of the Recommendations referred to *in vitro* test results obtained from animal experiments only, it was agreed to delete the word "animal" to allow alternative methods.

Tests and criteria for Class 8

Document: ST/SG/AC.10/C.3/R.416 (CEFIC)

48. The Sub-Committee took note of the comparison between the assignment to packing groups according to the current version of the Recommendations, according to the new criteria and according to the criteria proposed by CEFIC

in December 1992 (ST/SG/AC.10/R.390) but which were not adopted. The representative from CEFIC thought that the test results according to his proposal were more in line with the current classification than those resulting from the new criteria; however the table presented was not conclusive and he offered to prepare a new document with other test results.

ENVIRONMENTALLY HAZARDOUS SUBSTANCES

Documents: ST/SG/AC.10/C.3/R.222 (IMO - Carriage of environmentally hazardous substances by sea)
ST/SG/AC.10/C.3/R.388 (United States - Comparison between IMO/USA/OECD - RID/ADR criteria)

49. The Sub-Committee expressed appreciation for the work carried out by the expert from the United States in comparing various existing systems of criteria for substances hazardous to the aquatic environment, and noted in particular that there were three systems of importance:

A system identified by the OECD as the basis for developing internationally harmonized criteria for hazards to the environment. This system is based on criteria established by the Commission of the European Communities and the Scandinavian countries concerning the aquatic environment, and will in part be applied to international inland transport in Europe through RID/ADR as from 1 January 1995;

An IMO system, based on the GESAMP hazard profiles concerning the marine environment, which was already effective through the MARPOL Convention (Annex II for carriage in bulk and Annex III for carriage in packaged form) and through the IMDG Code;

A United States system for defining substances as hazardous to the environment.

A number of questions that needed to be addressed were listed in paragraph 14 of document -/C.3/R.388.

50. The expert from the United States recalled the conclusions of the United Nations Conference on Environment and Development in Chapter 19 of Agenda 21, and the request made to all organizations concerned to harmonize their classification and labelling systems.

51. The expert from France and the observer from Switzerland considered that the difference of environment, (freshwater/marine environment), justified different approaches with regard to test methods, evaluation of test results and criteria.

52. The expert from Canada suggested that all criteria concerning various environments could be aggregated in the UN Recommendations to define environmentally hazardous substances.

53. The expert from the United States suggested that the Sub-Committee should use the OECD criteria as a starting point for discussing the implications of introducing those criteria in the transport system. However

it would be necessary to take account of the mandatory IMO criteria and to see how they could eventually be introduced in the OECD criteria. Different levels of toxicity could be determined and it would then be possible to decide for which level(s) transport regulations should apply. He felt that it would be difficult to apply a multispecies testing approach and that uniformity was desirable. He considered that the Sub-Committee should identify a number of questions and that communication with other organizations was necessary.

54. The representative of HMAC questioned whether it was appropriate for the Sub-Committee to undertake the development of criteria for environmentally hazardous substances. He expressed the concern that if the competent environmental agencies failed to accept such criteria, the result would be a proliferation of criteria for defining environmentally hazardous substances.

55. The representative of IMO recalled that the body responsible for MARPOL Annex III was the Marine Environment Protection Committee (MEPC) and not the Sub-Committee on the Carriage of Dangerous Goods (CDG). She said that criteria for determining marine pollutants were appended to Annex III and although it was an IMO policy not to amend its legal instruments too frequently, her organization would be prepared to cooperate and to revise those criteria if there was a reasonable justification for doing so.

56. The Chairman said that it would be necessary for further discussion to prepare a detailed comparison of the MARPOL Annex III system and the OECD system with regard to:

the test methods, including test conditions;
the various criteria used;
the assessment of results

and to see whether it would be possible to correlate criteria used for freshwater and those used for sea water.

LISTING AND CLASSIFICATION

Document: ST/SG/AC.10/C.3/R.360 (Germany, UN 2542 - Tributylamine)

57. The Sub-Committee agreed to reclassify UN 2542 from Class 8, Packing Group III, to Division 6.1, Packing Group II, and to modify the corresponding entry in Chapter 12 (see annex 2).

58. The expert from France said that this reclassification had little merit in terms of safety and recalled the principle adopted by the Committee at its last session that reclassification should be avoided as much as possible to avoid too frequent changes which were not easily followed by the industry. The expert from Germany said that reclassification should be done where it was justified by a data sheet as in this case.

Document: **ST/SG/AC.10/C.3/R.374 (Canada, UN 2906, Triisocyanatoisocyanurate of isophoronediisocyanate solution)**

59. It was agreed to delete this entry, but not to add a cross reference in the index to UN 1263, (Paint or Paint related material) as certain solutions could be toxic and therefore should be carried under the appropriate n.o.s. entry (see annex 2).

Document: **ST/SG/AC.10/C.3/R.375 (Canada, UN 2708, Butoxyl)**

60. The entry for UN 2708 was deleted (see annex 2).

Document: **ST/SG/AC.10/C.3/R.383 (CEFIC, Antibiotic biomass feed additives in solid form)**

61. The Sub-Committee noted that problems occurred in practice because this substance is carried under an n.o.s. entry for which the modal regulations did not allow the use of flexible IBCs. However, CEFIC was requested to submit a new proposal with detailed test results justifying classification in Division 4.2 and more information on these additivies.

Document: **ST/SG/AC.10/C.3/R.384 (CEFIC, Organic pigments, self-heating)**

62. The expert from Germany felt that the formula given in the data sheet for classification of this new product was too generic and that certain pigments with the same formula could belong to Division 4.1 rather than to Division 4.2. The representative of CEFIC was invited to submit a new proposal with additional information.

Document: **ST/SG/AC.10/C.3/R.389 (France, addition of subsidiary risk of flammability to certain toxic substances)**

63. The proposal to add, as in the IMDG Code, RID and ADR, a flammability subsidiary risk to UN Nos. 1181, 1545, 1569, 1603, 1916, 2023, 2285, 2295, 2487, 2488, 2558, 2589, 2611, 2743 and 2744 on the basis of their flashpoint was agreed (see annex 2).

Document: **ST/SG/AC.10/C.3/R.402 (CEFIC - Deletion of Special Provision 80 and amendment of Special Provision 81)**

64. On this proposal by CEFIC that the approval of receptacles by the competent authority should no longer be required for UN Nos. 2555, 2556 and 2557, the Sub-Committee decided to assign Packing Group II to the entries for nitrocellulose, UN Nos. 2555, 2556, 2557 and 3270 and to amend Special provision 80 to read:

> "Packagings shall be so constructed that explosion is not possible by reason of increased internal pressure".

Special Provision 81 was deleted.

Document: ST/SG/AC.10/C.3/R.403 (CEFIC, UN 1908, chlorite solution)

65. The proposal to classify chlorite solutions according to the corrosivity criteria rather than to the percentage of available chlorine was agreed. On an oral proposal by HMAC, it was decided to apply the same principle to UN 1791, hypochlorite solutions (see annex 2).

Document: ST/SG/AC.10/C.3/R.404 (CEFIC, deletion of UN 2467, sodium percarbonate)

66. It was agreed to delete the entry for UN 2467, but to add Special Provision 126 against UN 3217 and to delete "N.O.S." in the proper shipping name for this entry "UN 3217, PERCARBONATES, INORGANIC" (see annex 2).

Document: ST/SG/AC.10/C.3/R.409 (United States, Plastic moulding compounds)

67. It was agreed to extend the entry UN 2211 (Polymeric beads, expandable) to plastic moulding compounds (see annex 2).

Document: ST/SG/AC.10/C.3/R.410 (France, 2-dimethylaminoethyl acrylate)

68. The Sub-Committee agreed to add a new entry for this substance in Division 6.1, but without subsidiary risk 8 as there was no evidence in the data sheet to prove the corrosivity. The proposed entry in table 12.2 was revised accordingly (see annex 2). The expert from France was invited to check the corrosivity data if deemed necessary.

Document: ST/SG/AC.10/C.3/R.413 (Secretariat: Listing and classification)

69. The Vice-Chairman reported on the work of a small group which had considered this document.

70. The Sub-Committee decided on the following amendments:

UN No. 1280: ", INHIBITED" not to be inserted

UN Nos. 1305, 2227, 2251, 2283, 2348, 2396 and 2525: insert ", INHIBITED"

UN No. 1160: keep the description as it appears in the eighth edition of the Recommendations

UN Nos. 1787, 1788, 1789 and 1790: delete "SOLUTION"

UN Nos. 1986 and 1988: in the description, insert the word "FLAMMABLE".

71. With regard to pending questions, Canada offered to submit a document at the Sub-Committee's next session.

Document: **ST/SG/AC.10/C.3/R.417 (United States, UN 2686 Diethylaminoethanol)**

72. The proposal to transfer UN 2686 from Class 3 to Class 8, Packing Group II, subsidiary risk 3 was agreed (see annex 2).

Document: **ST/SG/AC.10/C.3/R.420 (Germany, Grouping of pesticides)**

73. The Sub-Committee noted that the proposal to revise the recommendations on the classification of pesticides in Chapter 6 by referring to the Recommended Classification of Pesticides by Hazard based on WHO work would have important practical effects on the modal regulations as well as on the chemical industry as the WHO classification was revised every two years. It was decided to defer any decision and discussion of the document was postponed.

EDITORIAL REVIEW OF CHAPTER 3

Document: **ST/SG/AC.10/C.3/R.407 (United States, Special provision 230 for lithium batteries)**

74. The proposal to amend Special Provision 230 was adopted (see annex 2). On a question posed by the representative of ICAO, it was confirmed that it was not the policy of the Committee to recommend the dates of application of the Recommendations as those dates had to be decided by the individual modes.

Special Provision 145 - "Alcoholic beverage"

75. The expert from the United States proposed to amend Special Provision 145 to reflect the fact that alcoholic beverages with more than 70% alcohol by volume, in inner packagings of less than five litres, were not exempted when carried by air. The representative of IMO observed that they were not exempted when carried by sea either. The Sub-Committee agreed that the wording of Special Provision 145 might have to be reviewed and invited the expert from the United States to prepare a revised comprehensive proposal. The Sub-Committee also agreed to ask the IMO Sub-Committee on the Carriage of Dangerous Goods to express their views on the subject.

MATTERS RELATING TO PACKAGINGS AND IBCs

Document: **ST/SG/AC.10/C.3/R.380 (United States, revision of paragraph 16.1.3.2)**

76. The Sub-Committee agreed to align paragraph 16.1.3.2 on revised paragraph 9.3.1 to reflect that IBCs should be constructed and closed so that none of the contents can escape under normal conditions of transport, including the effects of vibration, or by changes in temperature, humidity or pressure (see annex 2) . In reply to questions about the vibration test, the expert from the United States confirmed that packagings had to be submitted to a vibration test in his country, but that dangerous goods imported in packagings conforming to the provisions of Annex I of the IMDG Code were accepted. The same approach is being followed in the proposed United States rules for IBCs.

Document: **ST/SG/AC.10/C.3/R.392 (Sweden, aluminium jerricans)**

77. The proposal to introduce new provisions for aluminium jerricans in Chapter 9 was adopted, with changes of an editorial nature (see annex 2).

Document: **ST/SG/AC.10/C.3/R.393 (Sweden, definition of semi-rigid IBCs)**

78. The proposal did not find any support and the expert withdrew it. It was suggested to delete references to semi-rigid IBCs, but the Sub-Committee felt that the consequences of such a deletion would have to be carefully evaluated and a written proposal would be needed.

Document: **ST/SG/AC.10/C.3/R.408 (United States)**

79. The Sub-Committee adopted the amendment to paragraph 16.5.9.3.3 to require IBCs with a plastics outer casing to be subjected to a stacking test for 28 days at a temperature of 40 °C.

Document: **ST/SG/AC.10/C.3/R.418 (United States, defintion of the term "rigid")**

80. The proposal to add a definition of the term "rigid" in paragraph 16.5.3.1.1 was adopted (see annex 2).

REVIEW OF CHAPTER 12 AND MULTIMODAL TANK TABLES

Documents: **ST/SG/AC.10/C.3/R.253 (United States of America - Chapter 12 - Portable tank table)**
ST/SG/AC.10/C.3/R.421 (United States of America - Multimodal tank requirements)
Information paper INF. 23 (United States of America - Comparison of requirements for multimodal tanks intended for the transport of liquids)

81. The Sub-Committee supported the principles proposed by the United States in document -/C.3/R.421 which outlined a harmonization effort for multimodal tank requirements that would include:

harmonization of the tank construction and operating requirements;

development of a rationalized approach for assigning specific requirements to substances, and

harmonization of requirements for specific substances.

82. In order to assist the Sub-Committee in its deliberations on these matters, the expert from the United States circulated an informal document containing a comprehensive side-by-side comparison of UN Chapter 12 recommendations, IMDG Code Section 13 requirements, United States transport regulations, and ADR Appendix B.1b requirements, along with comments. This document will be turned into an offical Sub-Committee document for the next session of the Sub-Committee.

83. Several experts welcomed the work done on the comparison set out in the document and stressed the need for a review of Chapter 12 of the Recommendations and for harmonization among the various modes.

84. The expert from France said that he hoped that any such harmonization would not result in the accumulation of all requirements as that would make tank containers prohibitively costly without corresponding improvement of safety. He also wondered whether the different transport modes, especially IMO, would align their rules on a revised Chapter 12. The representative of IMO expected that the IMO working group on tanks would react positively.

85. The expert from the United States pointed out that the different safety requirements had been looked at from various angles, which was why the harmonization work in question should be undertaken by a working group in conjunction with the representatives of all modes of transport.

86. The representative of IMO noted that there was an upcoming meeting during CDG 45 of an IMO working group on portable tanks and offered to host a one week meeting of a UN working group immediately following CDG 45. This arrangement should minimize travel and costs for some experts. CDG 45 will be held from 10 to 14 January 1994, with the UN working group convening from 17 to 21 January 1994.

87. It was confirmed that this working group would not be a joint UN/IMO working group but a working group of this Sub-Committee on the Transport of Dangerous Goods which would therefore have to respect the rules of procedure applicable to the work of the Committee of Experts on the Transport of Dangerous Goods, in particular with regard to participation and voting rights. Members of the Committee as well as observers were invited to include in their delegations relevant experts. On a proposal by the expert from France, the Sub-Committee agreed to elect Mr. Schulz Forberg (Germany) as Chairman of the working group.

88. The representative of OCTI recalled that an earlier attempt to harmonize RID/ADR with the IMDG Code had failed as a result of the different concepts of safety, which was the reason for the differences regarding valves and wall thicknesses, for example.

89. The expert from the Netherlands said that the specific modal differences should be maintained, particularly with regard to bottom discharge tanks, but expressed the hope that the matter would be discussed by IMO and the Joint Meeting on the basis of the document prepared by the United States.

90. On the proposal of Italy, the Sub-Committee decided to consider at its eighth session the terms of reference of the inter-sessional working group which is to meet in London.

91. The expert from the United States said that document ST/SG/AC.10/C.3/R.253 raised questions of both form and substance and that it would be preferable to consider it in its entirety upon development of a rationalized approach.

92. The Chairman also called the existence of document ST/SG/AC.10/C.3/R.490 of 3 December 1985, on the development of a tank coding system, which should also be reviewed in the context of harmonization.

Document: ST/SG/AC.10/C.3/R.398 (secretariat; Availability of certificates of approval issued by the competent authorities for tank-containers)

93. This document had been prepared by the secretariat on behalf of the UN/ECE Working Party on the Transport of Dangerous Goods (WP.15) following the decision by that Working Party to include a provision in the ADR requiring that the certificates issued after tests, inspections and checks, in which substances permitted for carriage in the shell must be listed, shall be carried on board units transporting tank-containers. This requirement had been decided in the light of a proposal by the Government of Belgium because of difficulties experienced for the control of vehicles carrying tank-containers coming from harbours.

94. The observer from Belgium said that there had been discussions in his country between inland transport and sea transport authorities about the permitted products in tank-containers. As no solution had been found, the Government of Belgium submitted a proposal for discussion to WP.15, which was not expected to be agreed. The expert from France, as Chairman of WP.15, recalled that there had been long debates on the matter, that the difficulties for controlling land transport of tank-containers imported from overseas countries had been recognized and the decision had been taken by a large majority.

95. The expert from the United Kingdom and the representative of CEFIC underlined the impracticality of such a requirement, as explained in paragraphs 5 and 6 of the document.

96. The expert from Canada, acknowledging the problem, supported the discussion of the WP.15 proposal but expressed concern at the fact that the proposed solution would significantly increase the accompanying documentation.

97. The expert from the United States recalled that the shipper had to sign a dangerous goods declaration certifying that the goods had been properly packed. He mentioned also that the requirement for compatibility between the substance to be carried and the material used for containing the substance was the same for packagings and IBCs, and no certificate of compatibility was required to be included in the documentation in those cases.

98. It was also mentioned that it would be impossible to list on a plate affixed to the tank all substances allowed to be carried, and that when groups of substances were listed in the certificate it was still necessary for the shipper to check that a specific substance within that group was compatible. Furthermore, detailed lists of substances were not included in practice in the certificate, and it was not possible to know, at the construction stage or testing stage what substance would in fact be carried.

99. The expert from Italy felt that the question should be readdressed globally in the process of revision of Chapter 12.

100. The proposal of the secretariat on behalf of WP.15 was not supported. The Sub-Committee invited WP.15 to reconsider their decision.

REVIEW OF CHAPTER 15 (DANGEROUS GOODS IN LIMITED QUANTITIES)

101. The expert from Germany said that he would prepare a proposal to align Chapter 15 of the Recommendations with Section 18 of the General Introduction to the IMDG Code for the next session.

ACTIVITIES OF THE IPCS COORDINATING GROUP ON THE HARMONIZATION OF CLASSIFICATION AND LABELLING SYSTEMS

Outcome of the United Nations Conference on Environment and Development

Documents: ST/SG/AC.10/R.412 (Secretariat; UNCEP, Agenda 21, Chapter 38)
ST/SG/AC.10/R.413 (Secretariat; UNCED, Agenda 21, Chapter 19)
ST/SG/AC.10/R.414 (Secretariat; UNCED, Agenda 21, Chapter 20)
ST/SG/AC.10/R.415 (Secretariat; UNCED, Agenda 21, Chapter 22)
ST/SG/AC.10/C.3/R.396 (Secretariat; Resolutions adopted by the General Assembly)
ST/SG/AC.10/C.3/R.397 (Secretariat; Decisions of the Economic and Social Council)

102. The Sub-Committee took note of the information provided by the secretariat, in particular:

(a) with regard to the General Assembly Resolution 47/190, the request to all organs of the United Nations system to give effective follow-up to Agenda 21 and the call to implement all commitments, agreements and recommendations reached at the UNCED, as well as the decision to include a standing item in the agenda of the General Assembly on the "Implementation of decisions and recommendations of the UNCED";

(b) with regard to General Assembly Resolution 47/191 and to ECOSOC Decision 1993/207, the establishment of the Commission on Sustainable Development, its functions, the inclusion of "Toxic chemicals and hazardous wastes (Agenda 21, Chapters 19, 20 and 22) as a "cluster" of its programme of work to be considered on a multi-year basis;

the recommendation that the Commission actively interacts with other intergovernmental United Nations bodies dealing with matters related to environment and development;

the request to all organizations of the United Nations system to strengthen and adjust their activities, programmes and medium-term plans in line with Agenda 21, and make their reports on steps they

have taken to give effect to the recommendation available to the Commission on Sustainable Development and the Economic and Social Council in 1993 or, at the latest, in 1994;

the invitation to all relevant governing bodies to ensure that the tasks assigned to them are carried out effectively, including the elaboration and publication on a regular basis of reports on the activities of the organs for which they are responsible, and that continuous reviews are undertaken of their policies, programmes, budgets and activities.

103. The Sub-Committee was informed that the Commission on Sustainable Development would consider the cluster relating to "Toxic chemicals and hazardous wastes" at its 1994 session, and that an overall consideration and evaluation of Agenda 21 would take place at the 1997 session for the preparation of a 1997 extraordinary session of the General Assembly. In response to resolution 47/191, the Sub-Committee invited the secretariat to establish contacts with the secretariat of the Commission on Sustainable Development and considered that a progress report on its activities should be submitted to the Commission at its 1994 session.

104. The representative of ILO informed the Sub-Committee that a meeting of Government-designated experts would be convened by the Executive Heads of WHO, ILO and UNEP in response to paragraph 19.76 of Chapter 19 of Agenda 21; this meeting would be hosted by the Government of Sweden from 25 to 29 April 1994, and that meeting could establish a future intergovernmental forum on chemical safety that could constitute a formal link between the IPCS activities and the Commission on Sustainable Development.

105. The expert from the United States considered that good progress had already been made in the process of intersectoral harmonization through informal arrangements with IPCS and OECD and felt that it would be possible to obtain a harmonized set of criteria through informal cooperation between interested organizations. He recalled the seriousness with which the Committee took the work of harmonization.

106. The Chairman said that the Committee had to respond in the fields falling within its competence and he expressed the view that it would not be practical to request more formal arrangements where harmonization could be reached through informal arrangements.

107. The Sub-Committee noted that there had been no meeting of the IPCS Coordinating Group for the Harmonization of Chemical Classification Systems since November 1992, and that the meeting originally planned for May 1993 had been postponed to 2 and 3 November 1993. A programme of work would be established at that session. The Coordinating Group is composed of Member State institutions (Worksafe Australia, Labour Canada, Japan Ministries of Health, Environment, Labour and Industry, United States Occupational Safety and Health Administration, United Kingdom Health and Safety Executive, Sweden National Chemical Inspectorate), of representatives of international

organizations (WHO, ILO, FAO, UNEP, IMO, ICAO, UN/ECE, OECD), the Commission of the European Communites (DGXI and DGV) and various non-governmental organizations including CEFIC and HMAC.

Document: ST/SG/AC.10/C.3/R.364 (Secretariat - Possibilities for greater harmonization of classification systems for physical hazards)

108. This document reproduces a draft report prepared by a consultant for the International Labour Office on Classification systems for physical hazards and possibilities for greater harmonization. The representative of ILO mentioned that this report had not yet been endorsed by ILO and should be revised on the basis of new developments. He was invited to note that some references to the transport classification system should be revised in the light of the eighth revision of the UN Recommendations.

109. The representative of ILO drew attention to the conclusions of the report, especially since the Committee of Experts had embarked on a rationalization of the Manual of Tests and Criteria, ways should be found to support and strenghten that activity and open it up to all the parties that will ultimately be confronted with the adaptation or modification of classification systems. As the experts for physical hazards were all the same as those participating in the work of the Committee, he had proposed to the secretariat to extend the meeting of the December session of the Working Group on the Rationalization of the Manual of Tests and Criteria for one day so that those experts may discuss the scope of their work in a larger context of harmonization. This had not been possible to arrange because of the busy timetable of the Working Group. Therefore it had been decided to convene those experts separately in the context of IPCS' work.

110. The representative of HMAC said that he was very confused, as he did not understand the precise relationship between the OECD Clearing House and IPCS for physical hazards. On the assumption that in the area of physical hazards it was anticipated that following rationalization of the Manual of Tests and Criteria, no further work would be necessary, he wondered why ILO considered this Manual as a starting point and who was in charge of the work.

111. The Chairman said that the timetable of the Working Group on the Rationalization of the Manual of Tests and Criteria was indeed very tight and that he had understood from the statements of the representative of OECD at the sixth session of the Sub-Committee (ST/SG/AC.10/C.3/12, paragraph 37) that OECD was satisfied with the timetable; he was under the impression that this Rationalized Manual of Tests and Criteria would be acceptable to OECD and therefore he did not see what the problem was with regard to physical hazards.

112. The representative of ILO said that his Organization had been asked by the IPCS Coordinating Group to act as a focal point for physical hazards and as a first step it was necessary to identify differences between various systems and to look at issues other than transport.

113. The expert from the United States said that document -/C.3/R.364 provided a good basis for working with other organizations; he was of the opinion that other non-transport regulatory bodies have different reasons for regulating other safety aspects and that multi regulatory criteria may be needed.

114. The Chairman recalled that it was a considerable undertaking to complete the work on rationalization of the Test Manual in relation to transport; he expressed the wish that if experts on physical hazards could afford to spend more time in other areas of work, they should adopt policies consistent with those of the Committee to avoid duplication or contradiction.

115. With regard to the reference to the Hazardous Material Regulations in Japan in document -/C.3/R.364, the expert from Japan explained that those regulations were only applicable to national transport of dangerous goods other than Classes 1, 2, 6, 7 and 8 by road, and that for international and national air and sea transport, the provisions of the IMDG Code and of the ICAO Technical Instructions were applicable.

Criteria for toxicity

Documents: ST/SG/AC.10/R.411 (Secretariat, report of the second OECD Clearing House)
ST/SG/AC.10/C.3/R.361 (CEFIC - Criteria for acute toxicity)
ST/SG/AC.10/C.3/R.363 (United States, Report of the second OECD Clearing House - comments)
ST/SG/AC.10/C.3/R.379 (HMAC - Classification criteria for solids based on acute toxicity)
ST/SG/AC.10/C.3/R.391 (United Kingdom - Acute toxicity criteria)

116. The expert from the United States explained in detail the report of the second Meeting of the OECD Clearing House which was hosted by his Government in Washington on 8 and 9 October 1992. The Sub-Committee expressed their appreciation for his efforts to identify the problems and to present such a complicated issue, i.e. the harmonization of toxicity criteria (dermal, oral and inhalation toxicities) applicable to different systems (Transport system, US OSHA/CPSC, Canada WHMIS, Commission of the European Communities system).

117. The representative of the the European Community recalled that the LD_{50} cut off values for oral toxicity in the ECE system (25/200/2000mg/kg) had been established in close connection with the applciation of OECD test methods; in the process of harmonization it had been found that the OECD methods could also be used for cut-off limits below 25mg/kg or above 2000mg/kg.

118. The representative of HMAC explained why his Organization would not support a change in the acute oral toxicity classification criteria for solids from an LD_{50} value of 200mg/kg to 500mg/kg and why he did not feel such a change would be warranted on the basis of transport safety (see document ST/SG/AC.10/C.3/R.379).

119. The representative of CEFIC in document -/C.3/R.361, supplemented by an information paper INF.11, showed that existing criteria did not always match actual classification (including assignment to packing groups). He also provided information on the effect of a change of criteria (oral toxicity) on classification of "high volume" chemicals produced or imported in Europe. He felt that the harmonization process should be accompanied by a reclassification of toxic substances according to the new criteria to ensure true harmonization between different systems, although this should not prohibit classification on the basis of well established human experience in a harmonized way in the different systems.

120. The expert from Canada requested the Sub-Committee to provide an early indication of some harmonization issues as evidence of its views on the desireability for harmonization.

121. After long discussions on the subject, and although there was no specific proposal to amend the existing Recommendations, the Sub-Committee agreed to have a preliminary expression of opinon on the various issues:

> Oral toxicity: at this stage, seven experts would be in favour of increasing the cut-off value for solids from 200mg/kg to 500mg/kg; one expert would be against; six would abstain. Eight experts would oppose the change of cut-off value for liquids from 500mg/kg to 200mg/kg, while one expert would favour it; five experts would abstain.
>
> Dermal toxicity: seven experts would agree to switch from a cut-off LD_{50} value of 40 mg/kg to 50mg/kg for the purpose of harmonization, because of the low number of substances involved; two experts would be against; five would abstain.

122. With regard to inhalation toxicity, the Sub-Committee noted that a document by Canada on the vapour pressure criteria should be submitted by Canada to the OECD Clearing House, and that it would be premature to discuss the question. The expert from the United States agreed to provide a more detailed paper on the implications of adopting the OECD Clearing House inhalation toxicity criteria. The expert from Germany offered to prepare a document on a revision of existing paragraph 6.5 (c) of the Recommendations.

123. With regard to the overall process of harmonization, the expert from the United States said that the goal set out in Agenda 21 was a harmonized system by the year 2000, and felt there was time for carefully considered decisions. The expert from Canada stressed the importance of adopting harmonized policies at national level in order to facilitate harmonization. The Chairman concluded that, although the work of harmonization could go beyond this biennium, certain results could already be achieved by the end of the current biennium and a progress report could be sent after the next Sub-Committee session to the Commission on Sustainable Development.

Other matters

124. The expert from Sweden circulated a report on the OECD Clearing House on Harmonization of Classification Systems (Consultations on classification criteria for the terrestial environment) and mentioned that progress was expected to be reviewed by February 1994.

RELATIONS WITH OTHER ORGANIZATIONS

Relations with UNEP

125. The Sub-Committee noted that the secretariat had been invited by the Interim Secretariat of the Basel Convention to an inter-organization consultation on the development of criteria for wastes of categories H10 (liberation of toxic gases in contact with air and water), H11 (delayed or chronic toxicity), H12 (Ecotoxic) and H13 (capable, after disposal of yielding other material).

126. The expert from Italy said that he had already raised the problem in the past but his proposal had been rejected. He was of the opinion that if criteria were developed for these categories of wastes, they should also apply to commercial products.

127. It was recalled that such wastes, according to paragraph 1.9.2 of the Recommendations, could be carried as Class 9 substances for the purpose of the implementation of the Basel Convention. The expert from Germany said that any new criteria should be considered carefully; for example some wastes of category H10 could belong to Class 6.1. The Chairman said that it would be useful to obtain a list of wastes likely to be classified under those categories.

Relations with ISO

Document: ST/SG/AC.10/C.3/R.415

128. The representative of ISO informed the Sub-Committee of the activities of Technical Committee ISO/TC.207 ("Environment management"). The Sub-Committee also noted that ISO/TC 147 (water quality) and ISO/TC 190 (soil quality) were involved in activities regarding the test methods for pollutants or effluents.

129. The representative of ISO also informed the Sub-Committee of the progress made by the Technical Committee ISO/TC.58 on the work on standards concerning gas cylinders (Information paper INF.4). He said that a procedure of parallel approval by ISO and the European Committee of Standardization (CEN) had been initiated with regard to ISO/DIS 9809 (steel cylinders), ISO/DIS 7866 (aluminium cylinders), ISO/CD 11118 (non-refillable industrial gas cylinders in sizes up to 5 litres) and ISO/WD 11119-1 (gas cylinders of composite materials)). A draft outline of basic rules for an international quality assurance system for transportable gas cylinders prepared by the Chairman of ISO/TC58 was circulated (Information paper INF.3); this draft should be discussed by ISO TC58/SC.3 in Canada from 16 to 18 November 1993.

130. The expert from the United States expressed concern over the fact that the parallel approval procedure would entail delays in the finalization of the ISO standards. The Sub-Committee shared that concern as it had hoped that references to ISO standards could be decided at the December 1994 session of the Committee, and it seemed that it would now have to wait until 1996. The expert from France also recalled the work on the revision of Class 2 by the RID/ADR Joint Meeting: the texts prepared by a working group would be considered in September 1993 and it was the intent to refer to CEN or ISO standards for requirements concerning cylinders of all types. The new texts should be finalized by the Joint Meeting by the end of 1994 so that they can enter legally into force by 1 January 1997. The representative of ISO was therefore invited to draw the attention of the relevant TC58 Sub-Committees to the fact that international legislation would be unable to take account for some time of the efforts made by ISO in harmonizing systems if the standards were not available in due course.

Relations with ICAO

131. The representative of ICAO said that the next meeting of the ICAO Dangerous Goods Panel was scheduled for 12 to 22 October 1993 and that the next revision of the Technical Instructions for the Safe Transport of Dangerous Goods by Air would be based on the eighth revision of the UN Recommendations. She drew attention to the difficulties encountered by an ICAO working group which had been convened last April because of the non-availability of the final report of the seventeenth session of the Committee which had not yet been issued.

132. A member of the secretariat said that due to the great number of new documents discussed by the Committee, the preparation of the final report had been difficult. Furthermore, the UN/ECE secretariat had also to serve a two weeks' session of the RID/ADR Joint Meeting in March 1993, and in view of the limited staff resources it had been impossible to prepare the report quicker. To improve the efficiency in future, he suggested that except in rare cases, the Committee should avoid considering new issues as its role should be to consider and endorse the work of the Sub-Committee. He added that the secretariat needed four to six months to prepare not only the report but also the English and French versions of the Recommendations, and therefore the various bodies concerned (ICAO Dangerous Goods Panel, IMO CDG Sub-Committee/Editorial and Technical Group, RID/ADR Joint Meeting) should avoid holding sessions during that period and should wait until the final documents have been issued before starting their consideration of the new Recommendations. He recommended that all bodies concerned establish a realistic timetable of implementation so that the various secretariats involved may work more efficiently without too demanding and wasteful efforts. The Chairman suggested that an interval of three years between adoption of the new Recommendations and their implementation through modal legislation might improve the situation, although that was a long period with regard to the needs of the industry.

133. The Sub-Committee reiterated its concern with respect to the insufficient staff resources for the servicing of its work and the delays that

the situation had entailed, and stressed again that the filling of the remaining vacant post in the dangerous goods unit of the Transport Division was a matter of urgency.

Relations with IMO

134. The representative of IMO said that the working relationship between IMO and the UN Committee of Experts would have to be reconsidered. In the past biennium, the CDG Sub-Committee, as a matter of expediency in achieving harmonization by 1 January 1995, had agreed to consider documents prepared by the secretariat which converted the UN Recommendations into equivalent IMDG Recommendations. However a number of IMO Government members had expressed the wish that in future, proposals for harmonization should be prepared by the Governments themselves rather than by the secretariat. Since the Committee of Experts does not fully represent all the member States of IMO that are implementing the IMDG Code, those members would prefer to see UN proposals followed up at CDG with equivalent proposals.

135. Some delegations and the Chairman expressed regret over this change of position, considering it would be detrimental to IMO's expressed intentions to harmonize with the UN Recommendations.

Relations with ILO

136. The representative of ILO said that a new "Convention concerning the prevention of major industrial accidents" had been adopted at the eightieth session of the International Labour Conference. This Convention does not apply to transport outside the site of an installation other than by pipeline.

OTHER BUSINESS

137. In an information paper (INF.19), the observer from Belgium drew attention to the lack of suitable test methods for self-heating substances in the liquid state. The expert from France doubted that such substances existed in the liquid form, but the expert from Germany said that liquid preparations existed and that he would submit a proposal for a test or at least a method for Division 4.2 self-heating liquids.

Introduction of CAS numbers into the UN Recommendations

Document: ST/SG/AC.10/R.417 (France)

138. Several delegations felt that the introduction of IUPAC names and CAS numbers in the Recommendations would unnecessarily increase the volume of the publication and would complicate the process of amendments. However the Sub-Committee supported by a majority vote the introduction of cross-references to CAS numbers in the index for pure substances and invited the expert from France to pursue the draft prepared for Class 3 and to extend it to all pure substances listed in the Recommendations, as mentioned in document ST/SG/AC.10/R.417.

Document: **ST/SG/AC.10/C.3/R.378 (HMAC - Classification of flammable liquids: exemptions based on inability to sustain combustion)**

139. After a lengthy discussion on the flashpoint and size of the packagings in paragraph 1.19 of the Recommendations, the Sub-Committee decided not to adopt the HMAC proposal and to leave the paragraph as adopted at the Committee's last session.

140. However, the Sub-Committee adopted the editorial amendments contained in paragraph 13 of the HMAC proposal (see annex 2).

Division 6.2 matters

Document: **ST/SG/AC.10/C.3/R.386 and Corr.1 (HMAC)**

141. The Sub-Committee agreed to consider the principles laid down in paragraph 3 (a) to 3 (h). Most principles were not supported by a number of delegations, especially the incorporation of the applicable risk group into the proper shipping name and the establishment of new entries in Class 9. It was also felt that diagnostic products and fermentation products could eventually be included in the definition of biological products. Certain experts recognized that there might be a need for further improvement of Chapter 6 including the packaging requirements, but it was regretted that the problems had not been clearly identified. The representatives of HMAC as well as other interested organizations were therefore invited to present new documents fully argumented on each aspect raised which would take account of the detailed comments made.

Document: **ST/SG/AC.10/C.3/R.411 (United Kingdom)**

142. The proposal No.1 for a new paragraph 6.14.6 (selective testing of packagings) was adopted. The proposal No.2, aiming at introducing, as in RID/ADR, the packaging code in the UN mark for packagings for Division 6.2 received the support of seven experts but it was agreed to postpone any decision because doubts expressed by the expert from the United States and an objection by the expert from Canada who felt that this Code would be confusing as the packagings were not according to the provisions of Chapter 9. The question should be readdressed in the future and the experts from Canada and the United States were invited to prepare arguments relating to their concerns.

FUTURE WORK PROGRAMME

143. The Sub-Committee suggested the following programme for the eighth session (22 November - 1 December 1993):

(1) Rationalization of the Manual of Tests and Criteria (Parts II and III) (see also annex 2 of document ST/SG/AC.10/19);

(2) Class 1 matters: revision of Chapter 10 (Special Recommendations on packing for explosives);

(3) Criteria for Division 5.1 (criteria for classification of solid and liquid oxidizing substances);

(4) Review of Chapter 12 and the multimodal tank tables;

(5) Class 2 matters (including ISO work on standards for gas cylinders and quality assurance);

(6) Class 8 matters, including test methods for determining metal corrosion;

(7) Listing and classification;

(8) Editorial review of Chapter 3;

(9) Matters related to packagings and intermediate bulk containers;

(10) Segregation requirements for dangerous goods;

(11) Review of Chapter 15 (Dangerous goods in limited quantities);

(12) Systematic list of entries (Extension of Appendix A);

(13) Activities of the IPCS Coordinating Group on the Harmonization of classification and labelling systems;

(14) Environmentally hazardous substances;

(15) Division 6.2 (Infectious substances);

(16) Relations with other organizations.

The deadline for submission of proposals is 8 September 1993.

144. The following documents were carried forward to the next session:

ST/SG/AC.10/R.411, -/R.412, -/R.413, -/R.414, -/R.415, ST/SG/AC.10/C.3/R.186 and Add.1, -/C.3/R.222, -/C.3/R.253, -/C.3/R.333, -/C.3/R.362, -/C.3/R.363, -/C.3/R.366, -/C.3/R.370, -/C.3/R.371 and Corr.1, - /C.3/R.376, - /C.3/R.379, -/C.3/R.385, -/C.3/R.388, -/C.3/R.390, -/C.3/R.391, -/C.3/R.394, -/C.3/R.396, -/C.3/R.397, -/C.3/R.399, -/C.3/R.400, -/C.3/R.420.

145. Documents ST/SG/AC.10/C.3/R.367, -/C.3/R.369, -/C.3/R.387 and -/C.3/R.382 were carried forward to the July 1994 session.

ADOPTION OF THE REPORT

146. The Sub-Committee adopted the report on its seventh session together with the annexes.

Annex 1

REPORT OF THE WORKING GROUP ON RATIONALIZATION OF THE MANUAL OF TESTS AND CRITERIA

Introduction

1. A working group was established to consider further development of a draft rationalized Manual of Tests and Criteria proposed by the United Kingdom in document ST/SG/AC.10/C.3/R.370 which was prepared on the basis of discussions at an inter-sessional working group held at BAM in March 1993 (see document ST/SG/AC.10/C.3/R.366). The terms of reference of the group were limited by the Sub-Committee to an editorial review and rationalization of the General Introduction, Part I and appendices to the manual and only to those technical amendments which had been proposed in documents. The working group was chaired by Mr. Groothuizen (Netherlands) and included experts from: Canada, France, Germany, India, Netherlands, Norway, Spain, Sweden, Switzerland, the United Kingdom, the United States and from the European Chemical Industry Council (CEFIC) and the Hazardous Materials Advisory Council (HMAC).

2. The following documents were considered by the working group:

-/C.3/R.366 Report of the BAM working group (G);
-/C.3/R.367 Technical amendments to Part I (UK); and
-/C.3/R.370 Draft rationalized test manual (UK);
-/C.3/R.373 Recommendations for the type 3(a) tests (F).
-/C.3/R.399 UN gap test (NL);
-/C.3/R.419 Revised Bureau of Explosives Machine test (USA);
INF.12 Revised Modified Type 12 impact tool test (C);
INF.13 Recommended type 3(a) tests (C);
INF.14 Proposed work on the 6(c) test (OECD);
INF.17 Recommended tests for type 3(b) tests (UK); and
INF.18 Proposed work on the type 4(b) tests (UK).

Procedure

3. The secretariat had suggested that there should be two new documents further developing the rationalized Manual (-/C.3/R.370) for the July 1994 session of the Sub-Committee, one concerning the General Introduction and Part I and the other concerning Parts II and III and the appendices. It was therefore agreed that the working group should produce a narrative report without the detailed text amendments to -/C.3/R.370. Mr. Roberts would circulate a draft document on the General Introduction and Part I for comment to the members of the working group as soon as possible after this meeting. The members of the working group were requested to send comments/corrections to Mr. Roberts by 12 November 1993. The United Kingdom will then submit the formal document to the secretariat giving the maximum time for translation. A similar procedure would be followed for the document on Parts II and III and the appendices to the Manual. Comments will be requested by 31 January 1994.

4. Most of the text in square brackets was agreed and the text proposed for deletion was deleted. Minor changes are not discussed in this report. The changes will be set out in the two formal United Kingdom documents. The expert from the United Kingdom will circulate a draft document, by the beginning of September 1993, to the members of the working group for comment/correction. This report concentrates on the contentious issues, on the inclusion of new "UN" test methods and on areas where it was considered that additional, clarifying text was necessary.

General Introduction

5. There was some discussion on the best way to indicate recommended tests. The expert from the United States preferred that the recommended tests be in a separate part of the manual. However, as this would necessitate a major change to document -/C.3/R.370, and involve considerable duplication of text, it was not considered possible to do so in this biennium. However, in order to explain and highlight the recommended tests, it was agreed that a new section 1.6 should be drafted explaining what they are and listing them. It was also agreed that they should be highlighted in the Table of Contents and in the individual tables of tests for each test series. These changes will be made in formal United Kingdom document to be submitted for consideration at the ninth session of the Sub-Committee.

Introduction to Part I

6. The new Class 1 Examples of Reports were accepted, apart from the section on the proposed assignment of musk xylene. As musk xylene in fibreboard drums is not assigned to Class 1, it was not considered useful in this example to say more than that it was exempted from Class 1.

Test Series 1

7. In document -/C.3/R.366, problems were identified in classifying substances and articles by analogy. It was agreed that more guidance may be necessary but as this was a technical issue it should be addressed on the basis of formal proposals. No formal proposals have yet been received.

8. Paragraph 11.3.2 was redrafted to make it clear that the substance should be tested in the form transported but that, if a mixture separates out, the initiator should be in contact with the most explosive part.

9. The Series 1 version of the UN gap test proposed by the Netherlands in document -/C.3/R.399 was provisionally accepted but was retained in square brackets until laboratories had tried the test. It was agreed that there should be an editorial note indicating that if adequate test results could be obtained, the type 1(a), 2(a) and Series A tests would be replaced by it. The draft test prescription was altered to allow the use of pentolite booster

charges and to remove the requirement for testing liquids in the cavitated state. Until experience had been gained with the test, it was agreed that it should be instrumented.

10. The changes to test type 1(b) were implemented as agreed by the Sub-Committee in the discussions on document -/C.3/R.367.

11. The expert from the United States was asked to confirm, by the eighth session of the Sub-Committee, that the Series 1 version of the SCB test could be deleted.

Test Series 2

12. It was agreed that tests 2(a)(i) and 2(a)(ii) could be deleted but it was not considered advisable to renumber the remaining tests as many countries had created databases based on the current numbering system.

13. The introduction and test prescriptions given for Test Series 2 were harmonized with those for Test Series 1.

14. The Series 2 version of the UN gap test proposed by the Netherlands in document -/C.3/R.399 was provisionally accepted but was retained in square brackets until laboratories had tried the test. The draft test prescription was altered to allow the use of pentolite booster charges and to change the gap length to 60 mm. The requirement for testing liquids in the cavitated state was retained. However, none of the current methods of cavitation were considered adequate and the expert from France agreed to supply a method based on the introduction of micro-balloons (hollow glass spheres used to sensitize explosives). Until experience had been gained with the test, it was agreed that it should be instrumented.

15. The changes to test type 2(b) were implemented as agreed by the Sub-Committee in the discussions on document -/C.3/R.367.

16. The expert from the United States was asked to confirm, by the eighth session of the Sub-Committee, that the Series 2 version of the SCB test could be deleted.

Test Series 3

17. The revised text for test 3(a)(i) given in document -/R.419 was accepted with minor editorial amendments.

18. The expert from the United Kingdom queried whether the gap used in testing liquids with the 3(a)(ii) test should be 1 or 2 mm. This could not be resolved at present and hence the current text requiring a 1 mm gap was put in square brackets until further discussion in July 1994. The expert from Canada referred to document INF.13 and expressed his concern that the criteria used in the preferred 3(a) test did not identify RDX, PETN and lead azide as too

dangerous to transport in the form tested. The expert from Germany considered that this judgement was based on the combination of results from all test types of Series 3 tests. Since no agreement could be reached with the expert from Germany, the expert from Canada was requested to make formal proposals developing the considerations expressed in INF.13.

19. Minor editorial amendments were made to the 3(a)(iii), 3(a)(iv) and 3(a)(vi) tests. As agreed by the Sub-Committee, the 3(a)(iv) test was not made a recommended test.

20. The revised text for test 3(a)(v) given in document INF.12 was accepted with minor editorial amendments.

21. The expert from the United Kingdom considered that there were serious deficiencies in the 3(b)(i) test which was currently being recommended. However, the United Kingdom proposal to have test 3(b)(ii) also as a recommended test was not agreed as the working group did not wish to set a precedent in having two recommended tests when there was no immediate prospect of their rationalization.

22. It was agreed that the Sample Comparison procedure used in both the 3(a)(iii) and 3(b)(ii) tests, and which was also applicable to other impact and friction tests, should be inserted into appendix 2 of the Manual.

23. The expert from the United States was asked to confirm, by the eighth session of the Sub-Committee, that ABL friction test could be deleted.

24. No expert from the Russian Federation was available to assist in the editing of tests 3(a)(vi) and 3(b)(iv). Most of the amendments proposed by the United Kingdom were accepted but these require checking by the country of origin.

25. The re-drafting of Part I of the 3(c) test was not considered acceptable as it did not clearly indicate that the test result can be obtained from the screening procedure alone. Various suggestions for improvements were made by the expert from the United States and the expert from the United Kingdom was asked to incorporate these in its new document.

26. As requested by the BAM working group, the United Kingdom had combined the 3(d)(i) and 3(d)(ii) tests into a single burning rate test using the solids procedure from the French test and the liquid procedure from the United States test. However, in certain circumstances it was considered that it may be necessary to perform both the French and the United States solids test procedure. The United Kingdom was asked to re-draft the combined test so that either solids procedure, or both, could be used.

Test Series 4

27. Additional text was drafted for the Introduction to clarify which tests were applicable to articles and packaged articles and which to packaged substances.

28. In test 4(a), dangerous exudation was included as a criterion for deciding that an article was too dangerous for transport.

29. In INF.18, the expert from the United Kingdom indicated that a research project was being commissioned to assess the effectiveness of the tests for determining the hazards from dropping and, if necessary, to develop revised or new tests. This work could not be completed by the end of this biennium and hence it was decided to make only minor editorial amendments to the type 4(b) test prescriptions. Experts were invited to send comments/suggestions to the expert from the United Kingdom.

Test Series 5

30. The Princess Incendiary Spark test was deleted as proposed in document -/C.3/R.367 and the Introduction to Test Series 5 changed accordingly.

31. The text relating to the use of a lead witness block in the 5(a) test was retained in square brackets pending further work by the expert from the United States to investigate differences in results between using lead blocks and steel witness plates. At the suggestion of the expert from Germany, examples of results were selected which more fully reflect the types of explosive which may be considered for Division 1.5.

32. Only minor editorial changes were made to the 5(b)(i), (ii) and (iii) tests. However, the expert from the United States was asked to provide the ASTM specification of the steel used in the 5(b)(ii) test and to provide more results. The Russian Federation was asked to check the changes made to the 5(b)(iii) tests, to provide a specification for the witness plate and to indicate the degree of tube fragmentation which was interpreted as a positive in the Examples of Results.

33. The expert from the United States offered to provide Examples of Results for the 5(c) test.

Test Series 6

34. There was considerable discussion on the Introduction to Test Series 6 and general agreement that it needed improving to clarify the purpose and applicability of each test. It was agreed that the expert from the United Kingdom should draft a new introduction which will be given, in square brackets, in the new document to be submitted for the ninth session of the Sub-Committee.

35. It was agreed that the Introductions to tests 6(a), 6(b) and 6(c) should be in the same form as will be proposed for the Introduction to Test Series 6. The editorial amendments to the 6(a) and 6(b) test prescriptions, proposed by the expert from the United Kingdom in document -/C.3/R.370, were accepted. It was agreed that there should be no Examples of Results for the 6(b) test as these were very specific to the packagings and articles tested.

36. It was recognized that there were some deficiencies in the current prescription for the 6(c) test. The expert from the United Kingdom introduced INF.14 submitted by OECD-IGUS which indicates that the OECD International Group of Experts on Unstable Substances (OECD-IGUS) is planning a meeting in April 1994 at which it is intended to agree an improved test prescription, with better definitions of the experimental arrangement and criteria, which will be submitted by OECD-IGUS as a formal document for consideration at the ninth session of the Sub-Committee. In any case, the expert from the United Kingdom will try and address the problems raised in the United Kingdom document on Part I of the manual. Experts from the Netherlands, United Kingdom and United States offered to supply examples of results for the 6(c) test.

37. The expert from the United Kingdom referred to paragraph 5 of document -/C.3/R.367 which proposes that a type 1(a) test and and type 2(c) test be used as screening tests for deciding which version of the 6(a) test was required, if at all, for industrial chemicals not intended for explosive use. It was agreed that the text given in paragraph 16.4.1.3.2 (c) of document -/C.3/R.370 should remain in square brackets pending further consideration.

Test Series 7

38. The expert from the United States was asked to confirm, by the eighth session of the Sub-Committee, that the Susan test could be deleted.

39. The text relating to the use of a lead witness block in the 7(a) test was retained in square brackets pending further work by the expert from the United States to investigate differences in results between using lead blocks and steel witness plates. The expert from the United States was also asked to provide the ASTM specification of the steel used in the 7(b) test.

40. The specification of the black powder used in the 7(c)(ii) / 7(d)(ii) Friability test was improved. The introduction of the 7(d)(ii) version of the test was altered to be consistent with the introduction to 7(d)(i) test.

41. It was agreed that when testing 15 samples in the 7(e) test, they should be arranged as three adjacent stacks of two on top of three tubes when one test of 15 is performed and as 5 tubes laid out in a row when three tests of 5 samples are performed.

42. The test criteria for the 7(g) test were clarified.

43. Only minor editorial amendments were made to the other Series 7 tests.

Appendices

44. The expert from the United States agreed to provide, by the ninth session of the Sub-Committee a new specification for the United States detonator, for appendix 1, as the current one can only be obtained by special manufacture.

45. The expert from the United Kingdom offered to correct the example given for the Bruceton method and to include the Sample Comparison procedure (see paragraph 22 above) in appendix 2.

46. The expert from France offered to supply a method of cavitation using micro-balloons for inclusion in appendix 3 (see paragraph 14 above).

47. Some amendments were made to the list of National Contacts for Test Details (appendix 4). The Russian Federation is requested to supply their national contact address.

Actions requested of the Sub-Committee

48. The Sub-Committee is requested to note this report and include it as an annex to the official report as a record of the principles underlying the agreed amendments to -/C.3/R.370 and of the outstanding actions.

Annex 2

DRAFT AMENDMENTS TO THE RECOMMENDATIONS

CHAPTER 1: SCOPE OF THE RECOMMENDATIONS

Paragraph 1.20: Replace the words "together with a method of testing for combustibility" by "together with methods for determining whether a liquid is considered able to sustain combustion".

CHAPTER 2: LIST OF DANGEROUS GOODS MOST COMMONLY CARRIED

UN 0158 Delete this entry.

UN 0203 Delete this entry.

UN 0331)
UN 0332)
UN 0482) Insert Special Provision "248", in column (b3)

UN 1181 Add Subsidiary Risk "3", in column (b2).

UN 1305 Add ", INHIBITED," in the name.

UN 1545)
UN 1569)
UN 1603) Add Subsidiary Risk "3", in column (b2).

UN 1787)
UN 1788)
UN 1789)
UN 1790) Delete the word "SOLUTION", in the name.

UN 1791 Delete "with more than 5% available chlorine" in the description.

Replace Special Provisions "51" and "223" by Special Provision "185", in column (b3).

UN 1908 Delete "with more than 5% available chlorine" in the description.

Replace Special Provision "51" by Special Provision "185", in column (b3).

UN 1916 Add Subsidiary Risk "3", in column (b2).

UN 1986)
UN 1988) Insert the word "FLAMMABLE", in the name.

UN 2023	Add Subsidiary Risk "3", in column (b2).
UN 2211	Amend the name to read: "POLYMERIC BEADS, EXPANDABLE or PLASTIC MOULDING COMPOUND, evolving flammable vapour".
UN 2227) UN 2251) UN 2283)	Add ", INHIBITED", in the name.
UN 2285) UN 2295)	Add Subsidiary Risk "3", in column (b2).
UN 2348) UN 2396)	Add ", INHIBITED", in the name.
UN 2467	Delete this entry.
UN 2487) UN 2488)	Add Subsidiary Risk "3" in column (b2).
UN 2522	Amend the name to read: "2-DIMETHYLAMINOETHYL METHACRYLATE".
UN 2527	Add ", INHIBITED", in the name.
UN 2542	Transfer from Class 8, Packing Group III to Division 6.1, Packing Group II.
UN 2555	Add Packing Group "II" in column (c1).
UN 2556) UN 2557)	Change Special Provision "81" to Special Provision "80", in column (b3) and add Packing Group II in column (c1).
UN 2558) UN 2589) UN 2611)	Add Subsidiary Risk "3", in column (b2).
UN 2686	Amend the name to read: "2-DIETHYLAMINOETHANOL" and transfer from Class "3", Packing Group "III", to Class "8", Packing Group "II" with subsidiary risk "3", in column (b2).
UN 2708	Delete this entry.
UN 2743) UN 2744)	Add Subsidiary Risk "3", in column (b2).
UN 2906	Delete this entry.
UN 3217	Delete "N.O.S." in the name and add Special Provision "126", in column (b3).

UN 3270 Change Special Provision "81" to Special Provision "80", in column (b3).

Add a new entry as follows:

(a1)	(a2)	(b1)	(c1)	(c2)
"3302	2-DIMETHYLAMINOETHYL ACRYLATE	6.1	II	M"

CHAPTER 3: SPECIAL PROVISIONS RELATING TO INDIVIDUAL SUBSTANCES AND ARTICLES

Special provision 51: to be deleted.

Special Provision 80: Amend to read:

"80 Packagings should be so constructed that explosion is not possible by reason of increased internal pressure."

Special Provision 81: to be deleted.

Special provision 207: Amend to read:

"Polymeric beads and moulding compounds may be made ..." (remainder unchanged).

Special Provision 215, amend to read:

"215 This entry only applies to the technically pure substance or to formulations derived from it having an SADT higher than 75 °C and therefore does not apply to formulations which are self-reactive substances. (For self-reactive substances, see table 14.1.)

The packing method should be one of the following:

(i) a fibre drum, which may be lined, of maximum contents 50 kg; or

(ii) an inner packaging of a single plastics bag in a fibreboard box, of maximum contents 50 kg; or

(iii) inner packagings of plastics bottles, jars, bags or boxes, of maximum contents 5 kg each, within an outer packaging of a fibreboard box or a fibre drum of maximum contents 25 kg.

For packing methods (i) and (ii), the requirements of special provision 181 should be applied to formulations showing a violent effect in laboratory tests involving heating under confinement."

Special Provision 230: Amend the introductory portion to read:

"Lithium cells and batteries may be transported under this entry if they meet the following requirements:"

and add a new subparagraph (1) to read as follows:

"(1) Cells and batteries are excepted from subparagraph (j) if they are assigned to Class 9 on the basis of tests carried out in accordance with Part IV of the Recommendations, Tests and Criteria."

Add a new Special Provision 248 as follows:

"248 Substances in Division 1.5D may be transported in metal, flexible, rigid plastics and composite Intermediate Bulk Containers (IBCs) that meet the applicable requirements of Chapter 16 at the Packing Group II level of performance. Flexible IBCs may only be used for solid substances."

CHAPTER 4: SPECIAL RECOMMENDATIONS RELATING TO CLASS 1

Paragraph

4.7.2 Add a new paragraph as follows:

"4.7.2 Consignment of goods of Class 1, other than Division 1.4, should be accompanied by a declaration, which may appear on the transport document, certifying that the freight container, vehicle or wagon is structurally serviceable as defined in paragraph 4.7.1."

Renumber the existing paragraph 4.7.2 as 4.7.3.

Table 4.3

Under "explosive secondary", delete "0158" and "0203".

CHAPTER 5: SPECIAL RECOMMENDATIONS RELATING TO CLASS 3

Paragraph 5.2: Amend the beginning to read:

"Liquids are considered to be unable to sustain combustion for the purpose of these Recommendations ..." (remainder unchanged).

CHAPTER 6: SPECIAL RECOMMENDATIONS RELATING TO CLASS 6

Insert a new 6.14.6 to read:

"6.14.6 The competent authority may permit the selective testing of packagings that differ only in minor respects from a tested type, e.g.

smaller sizes of inner packagings or inner packagings of lower net mass; and packagings such as drums, bags and boxes which are produced with small reductions in external dimension(s)."

Renumber the subsequent paragraphs accordingly.

CHAPTER 8: SPECIAL RECOMMENDATIONS RELATING TO CLASS 8

Paragraph

8.3 Delete the word "animal".

CHAPTER 9: GENERAL RECOMMENDATIONS ON PACKING

1. 9.4.7: Introduce aluminium jerricans in the table of assigned types and codes of packagings.

2. Amend 9.6.3, 9.6.3.1, 9.6.3.2 and 9.6.3.3 to read as follows:

"9.6.3 Metal jerricans

3A1 steel, non-removable head	3B1 aluminium, non-removable head
3A2 steel, removable head	3B2 aluminium, removable head

9.6.3.1 Body and head should be constructed of steel sheet, of aluminium at least 99% pure or of an aluminium base alloy. Material should be of a suitable type and of adequate thickness in relation to the capacity of the jerrican and to its intended use.

9.6.3.2 Chimes of all steel jerricans should be mechanically seamed or welded. Body seams type of steel jerricans intended to contain more than 40 litres of liquid should be welded. Body seams of steel jerricans intended to carry 40 litres or less should be mechanically seamed or welded. For aluminium jerricans, all seams should be welded. Chime seams, if any, should be reinforced by the application of a separate reinforcing ring.

9.6.3.3 Openings in jerricans (3A1 and 3B1) should not exceed 7 cm in diameter. Jericans with larger openings are considered to be of the removable head type (3A2 and 3B2). Closures should be so designed that they will remain secure and leakproof under normal conditions of transport. Gaskets or other sealing elements should be used with closures, unless the closure is inherently leakproof."

3. 9.7.3.1: Introduce aluminium jerricans in the first part of the table (after Steel jerricans).

CHAPTER 10: SPECIAL RECOMMENDATIONS ON PACKING FOR CLASS 1

Table 10.1

Delete Packing Method E21.

CHAPTER 12: RECOMMENDATIONS ON MULTIMODAL TANK TRANSPORT

Table 12.2

1. Amend as necessary in accordance with amendments adopted for Chapter 2.

2. Amend as follows:

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
* 2542	Tributylamine	6.1/II	-	2.65	12.5.2	A/12.7.3	N.	12.22.3
2686	2-Diethylaminoethanol	8/II	3	2.65	12.5.2	A/12.7.3	N.	12.22.3*

3. Add a new entry as follows:

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
*3302	2-Dimethylaminoethyl acrylate	6.1/II	-	2.65	12.5.2	A/12.7.3	N.	12.22.3*

CHAPTER 14: SPECIAL RECOMMENDATIONS RELATING TO CLASS 4

Table 14.1 Amend as follows:

SELF-REACTIVE SUBSTANCE	Concentration (%)	Packing Method	Control temperature (°C)	Emergency temperature (°C)	UN Generic entry	Remarks
Amended entry AZODICARBONAMIDE FORMULATION TYPE B, TEMPERATURE CONTROLLED	< 100	OP5B			3232	(1)(2)
New entry AZODICARBONAMIDE FORMULATION TYPE C	< 100	OP6B			3224	(3)
Amended entry AZODICARBONAMIDE FORMULATION TYPE C, TEMPERATURE CONTROLLED	< 100	OP6B			3234	(4)
New entry AZODICARBONAMIDE FORMULATION TYPE D	< 100	OP7B			3226	(5)
Amended entry AZODICARBONAMIDE FORMULATION TYPE D, TEMPERATURE CONTROLLED	< 100	OP7B			3236	(6)

Remarks

(3) Azodicarbonamide formulations which fulfil the criteria of 14.2.2.4.2(c).

(5) Azodicarbonamide formulations which fulfil the criteria of 14.2.2.4.2(d).

The numbers in the "Remarks" column of table 14.1 should be altered as follows:

renumber "3" to read "4", renumber "4" to read "6" and renumber "5" to read "7" and insert the new numbers "3" and "5" as shown above.

CHAPTER 16 RECOMMENDATIONS ON INTERMDIATE BULK CONTAINERS (IBCs)

Paragraph

16.1.3.2 Amend to read:

"IBCs should be constructed and closed so that none of the contents can escape under normal conditions of transport including the effects of vibration, or by changes in temperature, humidity or pressure."

16.5.3.1.1 Add the following text:

"A "rigid" inner receptacle is a receptacle which retains its general shape when empty without closures in place and without benefit of the outer casing. Any inner receptacle that is not "rigid" is considered to be "flexible"."

16.5.9.3.3 Amend the second and third sentences to read:

"With the exception of the IBCs where the outer casing is of plastics material, bearing the stacking load, IBCs should be subjected to the test of 24 hours. IBCs with outer casings of plastic material, bearing the stacking load, (i.e., types 11HH1, 11HH2, 21HH1, 21HH2, 31HH1 and 31HH2) should be subjected to the test for 28 days at 40 °C."

APPENDIX A: LIST OF GENERIC OR N.O.S PROPER SHIPPING NAMES

Amend as necessary in accordance with amendments adopted for Chapter 2.

INDEX

Amend as necessary in accordance with amendments adopted for Chapter 2.

MANUAL OF TESTS AND CRITERIA (ST/SG/AC.10/11/Rev.1)

Part I; Test 3 (a)(i) (Bureau of Explosives impact machine):

The test should be revised in accordance with document ST/SG/AC.10/C.3/R.419.